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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,335	06/09/2006	Walter Dobler	12810-00274-US1	5397

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EXAMINER
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WITHERSPOON, SIKARL A

ART UNIT	PAPER NUMBER
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1621

MAIL DATE	DELIVERY MODE
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11/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/596,335

Applicant(s)

DOBLER ET AL.

Examiner

Sikarl A. Witherspoon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25 is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☒ Claim(s) 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 8/23/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 23 provides for the use of tetrahydrogeranylacetone for preparing phytol, isophytol, etc., but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 23 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13, 17, 18, and 20- 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krill et al (US 2003/0040645).

The instant claims are drawn to a process for preparing tetrahydrogeranylacetone by aldol condensation of citral with acetone in the presence of an aqueous alkali metal hydroxide to form pseudoionone, followed by hydrogenation.

Krill et al teach a process wherein 6,10-dimethylundecan-2-one (tetrahydrogeranylacetone) is produced by two-phase aldolization of citral and acetone with potassium hydroxide, and hydrogenation, wherein a hydrogenation catalyst, palladium on carbon, is suspended in a batch, and citral and acetone are added to the suspension. After cooling, the catalyst is separated by filtration and the organic phase is washed with water yielding 89% tetrahydrogeranylacetone (example 8; p 3, line 0029 to p 6, line 0065).

The primary difference between the instant claims and the process taught by Krill et al is that the process of the instant invention is a two-step process, i.e., aldolization and separate hydrogenation; Krill et al teach a process wherein the aldolization reaction is conducted under hydrogenation conditions. In other words the aldol reactants and base are fed to a suspension of hydrogenation catalyst.

This is not a patentable distinction because it would have been obvious to a person having ordinary skill in the art to conduct the process in two successive steps, especially on an industrial scale when a purer tetrahydrogeranylacetone is desired, or in

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a one-pot synthesis, i.e., wherein the aldol reaction and hydrogenation reaction occur in the same pot, particularly in a batch operation.

Claims 14-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krill et al as applied to claims 1-13, 17, 18, 20 and 22 above, and further in view of Brocker et al (US 6,150,564).

The instant claims add further process limitations, such that the hydrogenation is carried out in an apparatus that inhibits the transport of the catalyst particles.

Krill et al do not teach such a limitation; however, Brocker et al teach a process for the selective liquid phase hydrogenation of compounds having multiple sites of unsaturated, i.e., alpha, beta-unsaturated carbonyl compounds, wherein the hydrogenation is carried out in a packed bubble column reactor, using a palladium or rhodium catalyst. Suitable packing materials include metallic materials, plastics, ceramics, and/ or inorganic fibers (col. 2, lines 12-67).

In light of the combined reference teachings, it would have been prima facie obvious to conduct a hydrogenation reaction of a poly-unsaturated carbonyl compound, using a reactor having a catalyst suspended through a device that inhibits transport of catalyst particles, especially since when the catalyst particles are slowed down and held up at the packing channel walls, an improvement in hydrodynamics is achieved, which enhances catalyst utilization (Brocker, col. 2, lines 22-28).

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Claim 24 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Specification***

The disclosure is objected to because of the following informalities: a brief description of the drawings is missing. Appropriate correction is required.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikarl A. Witherspoon whose telephone number is 571-272-0649. The examiner can normally be reached on M-F 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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*Sikarl A. Witherspoon*  
SIKARL A. WITHERSPOON  
PRIMARY EXAMINER